HERPETOLOGY

Project title: Amphibian and Reptile Inventory and Monitoring: Grand Teton and Yellowstone National Parks

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Objective: 1) Systematic surveys: Survey potential amphibian breeding habitat in randomly-chosen watershed units (7th level Hydrological Units); identify locations of active amphibian breeding sites and presence of amphibian and reptile species. 2) Targeted species surveys: Visit a subset of previously identified boreal toad breeding sites to determine if toads continue to breed at these sites. 3) Update species lists for amphibians and reptiles documented in Grand Teton (GRTE) and Yellowstone (YNP) National Parks. 4) Conduct monitoring of a Columbia spotted frog population at a site in YNP where historical information exists and which has been monitored annually since 1991.

Findings: 1) In YNP, we worked in eight watershed units, conducting surveys at 237 sites. At 154 sites with apparent potential amphibian breeding habitat, 70 sites were occupied by breeding amphibians: tiger salamander (eight sites), boreal toad (three sites), boreal chorus frog (49 sites), and Columbia spotted frog (30 sites). Two of the boreal toad sites were in one watershed unit. 2) Boreal Toad surveys: We visited six previously-identified boreal toad breeding sites in YNP. Reproduction was documented at four sites. We found few toad metamorphs, relative to previous years. Drought conditions reduced habitat size and quality. 3) Amphibian species found in YNP in 2001: Blotched Tiger Salamander *(Ambystoma tigrinum melanostictum)*, Boreal Toad *(Bufo boreas boreas)*, Boreal Chorus Frog *(Pseudacris maculata)*, Columbia Spotted Frog *(Rana luteiventris)*. Reptile species found in YNP: Northern Sagebrush Lizard *(Sceloporus graciosus graciosus)*. Wandering Garter Snake *(Thamnophis elegans vagrans)*, Prairie Rattlesnake *(Crotalis viridis viridis).* A database with all amphibian and reptile observations and a report were submitted to the NPS GRYE Inventory Program. 4) Columbia spotted frog population monitoring: There were 13 egg masses in the main study area and 30 in a downstream area that is monitored less intensively. This is slightly lower than last year. Population estimates based on photo identification are pending. In 2001, we found that 25% of the frog population in the main study area was in the juvenile life stage, compared to 52% in 2000. This reduction probably reflects recruitment failure in 2000, which was a drought year. In 2001, the drought continued and very few tadpoles survived to metamorphosis in the main study area; we thus expect to see continued decline of the juvenile component of the pop-

ulation in 2002. We also predict that winter mortality may be high this winter (2001–2002) due to low water levels in the springs and streams where the frogs hibernate.

Habitat use patterns (based on frog distribution as revealed by the capture surveys) indicated that frogs continue to avoid the portion of main study area that is within a horse pasture, where stream banks and stream-side vegetation have been apparently affected by grazing. However, this stream section is also directly below the outflow from a water chlorination/pumping station, which may also affect habitat. Frog use of the forested area most heavily disturbed by recent fuel hazard reduction was also scant, although one frog was found under reintroduced woody debris. Improvements of the fence around the breeding pool by district resource management staff appeared to help improve habitat quality and extend water retention. Spotted frog breeding attempts at a wetland adjacent to the residential area (which we think is a relatively new breeding site) failed when the wetlands dried up in early August. However, spotted frogs did breed successfully at the downstream monitoring site, and some of the recruits were found dispersing upstream in the fall; possibly they will add to the frog population in the main study area. We located an over-wintering site in a small spring. This site appears to be used only by young-of-the-year. Discovery of this over-wintering site is significant because very few spotted frog hibernacula have been identified in the GYE.